

PATENT SPECIFICATION



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COMPLETE SPECIFICATION.

Improvements in Chain Tension Devices of Portable Saws.

I, TITO RODOLFO JONGHI, 8, Corso Vittorio Emanuele, Milano, Italy, a Subject of the King of Italy, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention relates to portable power saws whose chain is mounted on two wheels movable relatively to each other.

It has for its object an improved chain tension device more efficient and more easily adjustable in practice than the known devices of the same kind.

Saws of the kind referred to are known in which the chain wheels are respectively mounted on two carriers movable relatively to each other and in which the tension of the chain is produced by the control of the tension of a spring disposed between the carriers.

Saws are also known which are provided with a prehension handle whose inner part constitutes a valve for controlling the inflow of a power fluid, this valve comprising return springs.

According to the invention, one of the prehension handles is screwed on one of said carriers and the spring adapted to cause the tension of the chain is disposed within the said handle and abuts against said handle and the other carrier.

In the accompanying drawings:

Figure 1 illustrates by way of example a plan view of an embodiment of the saw comprising a chain tension device according to the invention.

Figure 2 is a side elevation thereof.

Figure 3 illustrates the handle mechanism and means for mounting one of the sprocket wheels over which the cutting mechanism is traversed.

Figure 4 is a sectional view of figure 3.

Referring now to the drawings, 1 denotes a sprocket chain trained over sprocket wheels 2 and 3. The sprocket chain may be of the usual type and it may consist of links provided with cutting teeth 7.

Sprocket wheel 2 is mounted on a screw 9, a portion 10 whereof constitutes a

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pivot-pin. Said screw 9 is rigidly secured to a fork 11 and is held in position by a wing nut 12 engaging the threaded end 13 of screw 9. The arms of fork 11 are rigidly connected to cross bars 14 integrally formed or rigidly joined to a casing or guard 15.

The sprocket wheel 3 is mounted on the end of the crank-shaft 17 of an internal combustion engine 18. 19 denotes a carburetor mounted on the crank-case 20 between the fuel supply tank 21 and the cylinder 22. 23 is the spark plug and 24 the fuel control throttle.

A casing 26 having the contour illustrated in the drawings or any other shape is mounted on the crank-case 20, providing a guard and preventing any injury to the operator manipulating this end of the device. A handle 27, disposed on a fan casing 28, and a handle 29 are adapted to be gripped and supported by the operator during operation.

In apparatus of this type, it is desirable to maintain the sprocket chain in a substantially taut condition, and to so arrange the chain as to permit ready removal. For this purpose, a bar 30 is removably secured at one end by any suitable means, such as screws 31^a, to the engine casing adjacent sprocket 3. The opposite end of said bar is bifurcated, said bifurcated portion extending between the arms of fork 11 to allow movement of bar 30, the bifurcated portion thereof is provided with slots 42 engaged by screw 9 and serving as a guide for said bar; the ends 31 of said bifurcated portion engage shoulders 32 of a bifurcated member 33 slidable between the arms of fork 11, arranged at the centre of guard 15 and rigidly secured to or integral with the latter. The stem 34 of bifurcating member 33 extends into a sleeve 35 secured to or formed integrally with guard 15. The outer surface of sleeve 35 is provided with screwthreads 36 engaging the screw-threaded portion 38 of a hollow handle 37. Surrounding stem 34 and within sleeve 35 is a spring 39, one end whereof bears against a flange or seat 40 of member 33, and the other end against a seat or transverse wall 41 formed in handle 37.

Due to this arrangement, handle 37 together with sleeve 35 and arms 11 are constantly urged outwardly through the medium of member 33 under the tension of spring 39. Furthermore, the tension of spring 39 may be adjusted at will by screwing or unscrewing handle 37. This results in an adjustment of the tension of sprocket chain 1 inasmuch as the members 11 and 30 forming the saw carrier and which carry respectively the pinions 2 and 3 are thus moved axially relatively to one another.

In operation, handle 37 is first rotated until the desired tension of the chain is obtained. The saw is then held by the handles 27, 29 and 37 by two men and the cutting teeth brought into contact with the material to be cut or severed. The engine is then started and the saw operates. To remove the chain 1 for any purpose, handle 37 is unscrewed until the tension of spring 39 is sufficiently reduced. Bar 30 is then unscrewed from the casing and the chain removed from sprocket wheel 3. To remove the chain from sprocket wheel 2, wing nut 12 is unscrewed and screw 9 removed.

From the above, it will be seen that an

efficient, durable, easily operable, portable saw is thus provided, the chain tension of which may be easily adjusted at will as above mentioned.

Since it is obvious that changes may be made in the specific details above described, the invention is not limited thereto.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1.—A portable power chain saw, whose chain is carried by two wheels respectively mounted on two carriers movable relatively to each other and connected by a spring, characterized in that one of the prehension handles is screwed on one of said carriers and in that the spring adapted to cause tension of the chain is disposed within the said handle and abuts against said handle and the other carrier.

2.—A portable power chain saw, comprising a tension device substantially, as described and illustrated by the accompanying drawings.

Dated this 19th day of November, 1929.
MARKS & CLERK.

[This Drawing is a reproduction of the Original on a reduced scale.]

